

Name: _____

at1119paper: Complete the Square, $b = \text{odd}$ (v509)

Example

By completing the square, find both solutions to the given equation:

$$x^2 - 61x = -910$$

Add $\left(\frac{-61}{2}\right)^2$, which equals $\frac{3721}{4}$, to both sides of the equation.

$$x^2 - 61x + \frac{3721}{4} = \frac{81}{4}$$

Factor the left side.

$$\left(x + \frac{-61}{2}\right)^2 = \frac{81}{4}$$

Undo the squaring.

$$\begin{array}{lll} x + \frac{-61}{2} = \frac{-9}{2} & \text{or} & x + \frac{-61}{2} = \frac{9}{2} \\ x = \frac{61-9}{2} & \text{or} & x = \frac{61+9}{2} \\ x = 26 & \text{or} & x = 35 \end{array}$$

Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 27x = -50$$

Question 2

By completing the square, find both solutions to the given equation:

$$x^2 + 47x = 378$$

Question 3

By completing the square, find both solutions to the given equation:

$$x^2 - 55x = -414$$